CLAIMS:

1. An optical analysis system (1) for determining an amplitude of a principal component of an optical signal, the optical analysis system comprising:

- a first detector (5) for detecting the optical signal weighted by a first spectral weighting function,
- a second detector (6) for detecting the optical signal weighted by a second spectral weighting function,
- a dispersive element (2) for spectrally dispersing the optical signal, and
- a distribution element (4) for receiving the spectrally dispersed optical signal and for distributing a first part of the optical signal, weighted by the first spectral weighting function, to the first detector (5) and a second part of the optical signal, weighted by the second spectral weighting function, to the second detector (6).

2. An optical analysis system (1) as claimed in claim 1, wherein the principal component comprises a positive part in a first spectral range and a negative part in a second spectral range, the first part of the optical signal weighted by the first spectral weighting function corresponding to the positive part, the second part of the optical signal weighted by the second spectral weighting function corresponding to the negative part, the first detector (5) and the second detector (6) being coupled to a signal processor (7) arranged to subtract a signal generated by the second detector (6) from a signal generated by the first detector (5).

3. An optical analysis system (1) as claimed in claim 1, wherein the principal component comprises a first principal component and a second principal component, the first part of the optical signal weighted by the first spectral weighting function corresponding to the first principal component, the second part of the optical signal weighted by the second spectral weighting function corresponding to the second principal component.

4. An optical analysis system (1) as claimed in claim 1, wherein the distribution element (4) has a surface (10) for receiving the spectrally dispersed optical signal, the surface (10) comprising a first set of surface elements (11) and a second set of surface elements (12),

the surface elements (11) of the first set being arranged to distribute the spectrally dispersed optical signal to the first detector (5), the surface elements (12) of the second set being arranged to distribute the spectrally dispersed optical signal to the second detector (6).

5. An optical analysis system (1) as claimed in claim 1, wherein the distribution element (4) comprises an array (20) of liquid crystal elements arranged to form a first set of sub-arrays (21) having refractive index gradients, and a second set of sub-arrays (22) having refractive index gradients, the sub-arrays (21) of the first set being arranged to distribute the spectrally dispersed optical signal to the first detector (5), the sub-arrays (22) of the second set being arranged to distribute the spectrally dispersed optical signal to the second detector (6).

6. An optical analysis system (1) as claimed in claim 1, wherein the dispersive element (4) is arranged to disperse the optical signal in a dispersive plane and the optical analysis system (1) further comprises a focusing member (3) for focusing the dispersed optical signal, the focusing member (3) having a first focal distance (F_1) in the dispersive plane and a second focal distance in a plane perpendicular to the dispersive plane, the first focal distance (F_1) being different from the second focal distance.

7. An optical analysis system (1) as claimed in claim 6, further comprising a further focusing member (8) for focusing the first part of the optical signal on the first detector (5).

8. An optical analysis system (1) as claimed in claim 7, further comprising a further dispersive element (9) for spectrally recombining the first part of the optical signal prior to focusing the first part on the first detector (5).

9. A spectroscopic analysis system (30) comprising:

- a light source (31) for illuminating a sample (32), thereby generating an optical signal having a principal component with an amplitude, and
- an optical analysis system (1) for determining the amplitude of the principal component of the optical signal as claimed in claim 1.

10. A blood analysis system (40) comprising a spectroscopic analysis system (30) as claimed in claim 9.